

## Deutsche Akkreditierungsstelle

### Annex to the Accreditation Certificate D-PL-19792-01-00 according to DIN EN ISO/IEC 17025:2018

**Valid from:** 21.10.2022

**Date of issue:** 06.12.2022

Holder of accreditation certificate:

**ATESTEO GmbH & Co. KG**  
**Drivetrain Testing**

At the locations:

**Konrad-Zuse-Straße 3, 52477 Alsdorf**  
**Jülicher Straße 499, 52070 Aachen**  
**Brandgehaege 18, 38444 Wolfsburg-Hattorf**  
**Matthäus-Merian-Straße 2A, 34253 Lohfelden**  
**Daimlerstraße 13, 85748 Garching**

The testing laboratory meets the minimal requirements of DIN EN ISO/IEC 17025:2018 and, if applicable, additional legal and normative requirements, including those in relevant sectoral schemes, in order to carry out the conformity assessment activities listed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and confirm generally with the principles of DIN EN ISO 9001.

*This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at <https://www.dakks.de>.*

Abbreviations used: see last page

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**This document is a translation. The definitive version is the original German annex to the accreditation certificate.**

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Tests in the fields:

**Durability tests and efficiency measurement of vehicle transmissions and vehicle-electric machines; durability tests and function tests of powertrains; durability tests and thermal flow and efficiency measurement of components of the exhaust gas line; howling tests of vehicle transmissions and vehicle-electric machines; rattle measurements of vehicle transmissions; determination of sound power and sound energy levels of machines**

Within the scope of accreditation marked with \*, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use standards or equivalent testing methods listed here with different issue dates.

The testing laboratory maintains a current list of all testing procedures within the flexible scope of accreditation.

The test procedures are marked with the symbols listed below for the locations where they are carried out:

A = Alsdorf      B = Aachen      C = Wolfsburg-Hattorf      D = Kassel-Lohfelden      E = Garching

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**Durability tests and efficiency measurement of vehicle transmissions (A, B, C, D);  
Durability tests and efficiency measurement of vehicle-electric machines (A, C, D)**

VA-0055 Durability tests of vehicle transmissions and vehicle-electric  
2022-12 machines

VA-0056 Efficiency measurement of vehicle transmissions and vehicle-electric  
2022-12 machines

*The aforementioned test methods are characterized by the measured variables listed in the following table:*

Test Type	Measured Variable	Measurement Range	Exp. Measurement Uncertainty (to k = 2)
Durability Tests	Torque	-6.000 N·m to +6.000 N·m	≤ 0,1 % MRE
	Rotation Speed	-25.000 rpm to +25.000 rpm	≤ 0,01 % MRE
	Temperature	Thermal Element Type K 0 °C to 150 °C	≤ ±1.0 K
	Pressure	Relative Pressure Measurement in the Measurement Range: 0 to 250 kPa 0 to 1.600 kPa 0 to 4.000 kPa	≤ 9,5 kPa ≤ 12 kPa ≤ 17 kPa
	Electrical Power AC	Performance Measurement of all Three Phases ≤ 1.000 V; -1.000 kW to +1.000 kW	≤ ±3.280 W
	Electrical Power DC	Performance Measurement for ≤ 900 V: -900 kW to +900 kW	≤ ±116 W
Efficiency Measurement	Torque	-6.000 N·m to +6.000 N·m	≤ 0,06 % MRE
	Rotation Speed	±75 to ±25.000 rpm	≤ 0,01 % MRE
	Temperature	Thermal Element Type K 0 °C to 150 °C	≤ ±1.0 K
	Pressure	Relative Pressure Measurement in the Measurement Range: 0 to 250 kPa 0 to 1.600 kPa 0 to 4.000 kPa	≤ 9,5 kPa ≤ 12 kPa ≤ 17 kPa
	Electrical Power AC	Performance Measurement of all Three Phases ≤ 1.000 V; -1.000 kW to +1.000 kW	≤ ±3.280 W
	Electrical Power DC	Performance Measurement for ≤ 900 V: -900 kW to +900 kW	≤ ±116 W

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**Durability tests and function tests of powertrains (E)**

PB-0016 Powertrain durability (Durability tests: durability tests and function tests according to customer specifications on powertrains)  
2022-11

*The aforementioned test methods are characterized by the measured variables listed in the following table:*

Test Type	Measured Variable	Measurement Range	Exp. Measurement Uncertainty (to k = 2)
Durability Tests and Function Tests of Powertrains	Torque	-4.000 N·m to +4.000 N·m	≤ 0,1 % MRE
	Rotation Speed	-25.000 rpm to +25.000 rpm	≤ 2 rpm
	Temperature	Thermal Element Type K -50 °C to 1.350 °C	≤ ±2,0 K
	Temperature	Temperature Sensor PT 100 -50 °C to 150 °C	≤ ±2,0 K
	Pressure	Relative Pressure Measurement in the Measurement Range: -80 kPa to 920 kPa	≤ 0,25 % Range
	Humidity	30 % -80 % rel. H.	≤ 2% rel. F.
	Flow Rate (Fuel)	Continuously 5 - 10 kg/h 10 - 15 kg/h 15 - 20 kg/h 20 - 95 kg/h	≤ 5 % MV ≤ 2 % MV ≤ 1 % MV ≤ 0,3 % MV
	Electrical Power AC	Performance Measurement of all Three Phases ≤ 1.000 V; -1.000 kW to +1.000 kW	≤ ±3.280 W
	Electrical Power DC	Performance Measurement for ≤ 900 V: -900 kW to +900 kW	≤ ±116 W

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**Durability tests and thermal flow and efficiency measurement of components of the exhaust gas line (A)**

VA-0052 Durability tests of components of the exhaust gas line  
2022-11

VA-0053 Thermal flow and efficiency measurement of components of the  
2022-11 exhaust gas line

*The aforementioned test methods are characterized by the measured variables listed in the following table:*

Test Type	Measured Variable	Measurement Range	Exp. Measurement Uncertainty (to k = 2)
Durability Tests	Temperature	Thermal Element Type K -50 °C to 1.350 °C	≤ ±2,0 K
	Mass Flow Rate	Gas 0 kg/h to 2.500 kg/h Fluids 0 kg/h to 10 kg/s	Gas ≤ 0,5 % MV Fluids ≤ 0,5 % MV
	Pressure	Relative Pressure Measurement Gas: 0 kPa to 600 kPa Relative Pressure Measurement Fluids: 0 kPa to 6.000 kPa	≤ 0,5 % MRE ≤ 0,5 % MRE
	Acceleration	0 m/s <sup>2</sup> to 980,7 m/s <sup>2</sup> (0 g to 100 g)	≤ 10 % MV
Thermal Flow and Efficiency Measurement	Temperature	Thermal Element Type K -50 °C to 1.350 °C	≤ ±2,0 K
	Mass Flow Rate	Gas 0 kg/h to 2.500 kg/h Fluids 0 kg/s to 10 kg/s	Gas ≤ 0,5 % MV Fluids ≤ 0,5 % MV
	Pressure	Relative Pressure Measurement Gas: 0 kPa to 600 kPa Relative Pressure Measurement Fluids: 0 kPa to 6.000 kPa	≤ 0,5 % MRE ≤ 0,5 % MRE

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**Tests of the braking system (B) \***

UN-R 90 Rev. 3, SA 02 2012-07	Uniform provisions concerning the approval of replacement brake lining assemblies, drum-brake linings and discs and drums for power-driven vehicles and their trailers (All test procedures that are carried out on a flywheel mass test bench)
UN-R 13 Rev. 6, SA 11 Annex 11 2010-11	Uniform provisions concerning the approval of vehicles of categories M, N and O with regard to braking (All test procedures that are carried out on a flywheel mass test bench)

**Abbreviations used:**

AC	Alternating Current
DC	Direct Current
MRE	Measuring range end value
MV	Measured value
UN	United Nations
SA	Series of Amendments
Rev	Revision
VA	Procedural Instructions of ATESTEO GmbH & Co. KG

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